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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,500	01/25/2002	Hakan Wolge	10625-003001	4378
21839	7590	05/05/2005	EXAMINER	
BURNS DOANE SWECKER & MATHIS L L P			CHEN, TE Y	
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			2161	

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/936,500	<b>Applicant(s)</b> WOLGE, HAKAN	
	<b>Examiner</b> Susan Y. Chen	<b>Art Unit</b> 2161	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-3 and 5-15 is/are rejected.  
7) ☒ Claim(s) 4 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

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|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Response to Appeal Brief***

This office action is in response to the appeal brief filed on 01/24/05.

Claims on appeal are: 1-15.

***Reopen Prosecution***

In view of the Appeal Brief filed on 05/28/2004, PROSECUTION IS  
HEREBY REOPENED. A new ground rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the  
following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply  
under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied  
by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130,  
1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that  
form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by MacLeod et al. (U.S. Patent No. 6,434,545).

As to claims 1-3 and 15, MacLeod et al. (hereinafter referred as MacLeod) discloses a system having computer implemented method and product as claimed by applicant, comprising:

1) extracting query statistic information from a plurality of data warehouse tables to perform complex mathematical function operations on the various variables of the plurality of tables as in the data warehouse [e.g., col. 5, lines 34-44], wherein the operations comprising:

- a) parsing the submitted query [e.g., the steps 170-172, Fig. 4];
- b) evaluate and identify all data tables containing at least one value of one of said calculation or classification variable [e.g., col. 2, lines 24-32];
- c) reading and identifying all tables that, directly or indirectly, have variables in common with the boundary tables and connect the same, such tables being connecting tables [e.g., the table scans and table joins technique; col. 5, lines 64- col. 6, line 4; the resolving references to database objects(174), Fig. 4];

d) electing a starting table among the boundary and connection tables to build a conversion structure that links value of each selected variable in the boundary tables to corresponding values of one or more connecting variables in the starting table [e.g., Fig 3 and associated texts; the use of query optimizer to evaluate an optimal execution plan, col. 6, line 63-64];

e) evaluating the mathematical function for each data record of the starting table, by using the conversion structure to convert each value of each connecting variable into at least one value of at least one corresponding selected variable [e.g., the use of query optimizer to evaluate an optimal execution plan, col. 6, line 62- col. 7, line 5];

f) generating a final data structure based on the evaluation, to containing an extracted result of said mathematical function for every unique value of each classification variable, in order to integrated into a database execution plan. [e.g., the step 170-180, Fig. 4, Fig(s). 10-11 and associated texts];

g) display the final result to a user in a human-readable form [e.g., the displays of Fig. 5 – Fig. 9 and associated texts].

As to claims 6-14, the features recited in these claims are addressed above with respect to analyze, correlate and build a final minimum cost result of a query execution plan by a conventional Database management system [e.g., Abstract, Fig(s). 3-11 and associated texts], hence are rejected for the same reason.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over MacLeod et al. (U.S. Patent No. 6,434,545) in view of Colby et al. (U.S. Patent No. 6,493,699).

As to claim 5, MacLeod discloses the claimed features as recited in claim 1, except he did not expressly disclose that identifying tables in database have variable in common and assigning virtual connection between such data tables, thereby creating a database with snowflake structure as claimed by applicant.

However, Colby et al. (hereinafter referred as Colby) discloses the technique to identifying tables in database have variable in common and assigning virtual connection between such data tables, thereby creating a database with snowflake structure as claimed by applicant [e.g., [e.g., the technique to correlate database tables with foreign key/primary key and evaluate Distinct Group By filtering processing for the selected Join operation to guild a snowflake dependency graphic, Fig(s). 11-13 and associated texts].

MacLeod and Colby are in the common field for extracting, evaluating and displaying statistic information from a data warehouse implemented by a computer in order to minimize the cost for the execution of complex database query functions. Therefore, with the teachings of MacLeod and Colby in front of him/her, an ordinary skilled person would have been motivated to apply the technique taught by Colby into MacLeod's system, because by doing so, the combined system will use these well known foreign/primary keys to correlate/join associated tables in the database, and grouping the distinct fields from the database tables, thus, thereby to produce an aggregated snowflake structure that itself can be displayed to allow an end user summarizing or consolidating detail level records processing on the associated database tables which would results in facilitating the database query functional cost analysis.

***Allowable Subject Matter***

Claim 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Claim 4 is objected because the prior art on record fails to disclose the feature of instant invention – assigning a different binary code to each unique value of each data

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variable in the database and storing the data record in a binary-coded form in a combination as claimed by applicant.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

To expedite the process of re-examination, the examiner requests that all future correspondences in regard to overcoming prior art rejections or other issues (e.g. 35 U.S.C. 112) set forth by the Examiner prior to the office action, that applicant should provide and link to the most specific page and line numbers of the disclosure where best support is found (see 35 U.S.C. 132).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Ballamkonda et al. (U.S. Patent No. 6,775,681) which discloses an evaluation of Grouping sets by reduction to Group-By clause, with or without a rollup operator using temporary tables.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan Y. Chen whose telephone number is 571-272-4016. The examiner can normally be reached on Monday - Friday from 7:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic can be reached on 571-272-4023. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Susan Y Chen  
Examiner  
Art Unit 2161

April 29, 2005

  
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